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## Forestry for Farms.

MANY writers and speakers have argued strenuously to prove how important our forests are as factors in the public economy. The direct usefulness of forest products and the influence of the forest-cover upon soil and temperature and drainage, and therefore upon climate and health, have been insisted on until the subject has become an old story, and a story with little meaning to very many good people. The strongest appeals to Congress for the protection of our national forest domain have been made on these broad considerations, and yet, although the testimony of science and of history ought to convince any candid mind, comparatively little has been effected in this direction. Besides this, persistent effort has been made to convince the holders of large areas of timber that it would not only be to the common welfare, but would accord with wise business forethought, to conduct their lumbering operations without the usual waste, and in accordance with the principles and practice of sound forestry. These teachings may have helped to prepare the way for a better system, but their results as yet are hardly visible.

Little direct effort, however, has been made to inaugurate wiser methods of treating woodlands on the farm. It is true that from many farms in the eastern states all the growing wood has practically been removed, but on the most of them a fair proportion of woodland still remains, and, except for the fact that they are not so frequently burned over, these small holdings are wasted and treated with as little intelligence and prudence as are the forests on the national domain. The amount of timber which comes into the market every year from the little wood lots on a thousand farms is enormous in the aggregate, and this supply has been a considerable factor in keeping down prices. Since the introduction of portable sawmills acre after acre of fair timber has been cut over, and as no provision has been made for a new crop the productive timber area is constantly diminishing. About ten years ago a lumberman brought one of these mills into a county of northern New Jersey. It was considered a perilous venture, for it seemed, on a casual survey, that all the available timber in the scattered wood lots of that section would be exhausted within half a dozen years at the farthest. But the same man has four mills now working, and competition has brought in six others, so that there are ten mills constantly at work on these isolated lots of timber. As it is the general practice of the farmers there to turn cattle into the cleared land there is little hope for any forest-growth here for a generation at least.

For this reason a little manual, entitled *Forestry for Farmers*, which has been prepared by Mr. Fernow and reprinted from the *Year-book of the Department of Agriculture*, ought to be welcomed for its possible usefulness. The farmer rarely treats his wood lot as if he considered it a source for the continuous supply of firewood, fencing and such dimension timber as he may need. When he wants a stick for any purpose he chooses the best tree he can find, and his laborers too often select trees for firewood which will cut and split most readily. In this way he not only culls out the best species of trees, but the best individuals of the species, and leaves the crooked and comparatively useless ones to cumber the ground. The folly of such practice would only be paralleled if he cut away his corn crop and left the weeds to grow. In a few brief paragraphs Mr. Fernow shows that no farmer need destroy in this way a source of revenue, and explains how the forest can be constantly used, and yet steadily improved, so that the wood lot will preserve its ability to furnish a timber crop, and as time goes on will have better kinds of wood to cut and better individual trees. No owner of woodlands can read the paragraphs on Reproducing the Wood Crop without being convinced of the extravagance and waste of resource which characterizes the ordinary wood-cutting on the farm or without seeing clearly how it is possible at once to use and to regenerate the woods.

"Forest-planting and tree-planting are two different things. The orchardist who plants for fruit, the landscape-gardener who plants for form, the roadside-planter who plants for shade, all have objects in view that differ from those of the forest-planter, and, therefore, they select and use material differently." These words begin the chapter on Forest-planting, which is written for farmers or small land-holders who have not already a lot of growing timber, and in the few pages devoted to the subject of starting timber plantation many very useful hints are given. These hints are all directed to methods which will produce the most wood of the best quality to every acre, for the object sought for is a crop, and not individual trees, any more than a spear of corn is considered by itself in preparing for a corn crop. Interesting hints are given about selecting trees for this crop, and the farmer who reads carefully the notes about their adaptability to climate, to soil, to situation, besides the necessity of selecting species not only for the usefulness of their wood, but for their general good influence upon the forest mass—that is, the total crop—will readily see how easy it is to make mistakes at this point which will be more disastrous because their effects are not seen for several years.

But, although to the forester the individual tree is only useful as a part of a mass, the successful planter must have a considerable knowledge of the various elements of his mass if he is to have the most profitable crop. Very appropriately, therefore, this little manual opens with a chapter entitled How Trees Grow, in which a few of the essentials in the behavior of a forest-tree are set forth. Some knowledge of the physiology of tree-growth is necessary both to one who cares for an established forest and one who plants a new one, and most interesting are the paragraphs which treat of such subjects as the food materials of the tree, the conditions of soil and light necessary to its development, its growth in length, in ramification and in thickness, its varying form and means of reproduction. Like the chapters which follow, this initial one is illustrated with some helpful cuts, and the book throughout is written in a straightforward style with the topics logically connected. Any intelligent farmer can comprehend it from end to end.

It will be of service to him in his immediate work, and, best of all, it will inspire him with a desire to learn more.

Improvement in forest practice will only come with increased knowledge, and these scattered bits of woodland, which would make a forest much larger than many of our states, will never approach their real value as a national resource until their owners have been educated to give them more intelligent treatment. Let us hope that this increase in knowledge will be speedily brought about, not only for the good of the farms and the timber on the farms, but as an assurance for a rational system of treatment for forests of the nation. If every wood lot on the farms of the country were now an object-lesson in good forest practice, it would be easy enough to secure proper legislation for the forests on the national domain.

## Seacoast Planting.

At the late meeting of the American Forestry Association, in Springfield, Massachusetts, Mr. Leonard W. Ross, of Boston, delivered an address on the subject of seacoast-planting as practiced on the Province lands of Cape Cod, where an effort is made to prevent the shifting sands at the extremity of the Cape from injuring settlements and the harbor. Mr. Ross has kindly sent us an abstract of his address, which we herewith publish:

The first work in connection with seashore planting should be a careful study of the individual case to be treated, as no two instances will be found to carry identical or even parallel conditions. Specific instruction to apply in every case is, therefore, out of the question, and only general suggestions can be made for solving such problems. The material for planting should in all cases be in the best possible condition. The area to be covered should be carefully prepared before actual planting begins. Of course, the results which might follow an equal effort inland, or in sheltered situations, or in better soil, need not be expected. The soil to be planted is usually thin and sterile, if, indeed, it is anything better than sand. In nearly all cases it is best to make thick border plantations on the water side of rapid-growing trees and shrubs which have resistant power against salt and wind, and among these may be planted longer-lived and more sturdy-growing kinds, the former acting as a nurse or protection to the latter in their earliest days. When this has become established, other plantings may be made behind it with some certainty of success.

It is generally supposed that the number of species adapted to this use is extremely limited, but experience shows that such is not the case. It becomes not so much a question of what to plant, but rather how to plant. In preliminary plantings the plants should always be set very closely, that one may protect the other. A good mulch should then be placed over the entire area and loaded down with stones such as may be usually found on the shore; the stones not only hold the mulch in place, but assist materially in retaining moisture during the dry season. Spring planting is safer than fall planting. It not infrequently happens, however, that plants set in early spring break into growth at once; then late spring storms follow, the tender growth is killed off and a secondary growth follows. This weakens the plants, and only such kinds as can endure these conditions should be used, especially for preliminary work. This may be avoided in a great measure by holding back the growth of the plants, by frequent transplantings in the nursery until the season is well advanced. Deep planting is found to be the safest in nearly all shore work, as the drainage is usually excessive.

Planting on the Province lands of Massachusetts, although still in its infancy, so far as the work under the present administration has gone, has now passed the experimental state and is being developed into a system at once conservative, thorough and energetic. The entire area (over 3,000 acres) consists only of sand. A considerable portion of this is covered with a surprisingly luxuriant growth of trees and shrubs, deciduous, evergreen and coniferous, together with many creepers and climbers. On the outer or ocean side are many hundreds of acres of wildly drifting sand-dunes or areas covered to a greater or less degree by Beach Grass, Ammophila arundinacea, and in the hollows and low places with other grasses.

Many thousands of dollars have been expended in Beach Grass planting, and, while this has not been wholly in vain, it has failed to hold the sand securely in place. If properly watched, and all breaks attended to when first started, the Beach Grass might hold the sand in check, but it would require constant attention. It is thought safest to cover the area with a growth of woody plants and trees. There is abundant evidence that this outer area was formerly covered by forest-growth, principally of Pine; the original layer of mold, with portions of stumps and pitchy heart-wood, is now frequently uncovered as the sand-hills recede inland.

Experimental plantings were first made by us in April, 1894. Of the plants not blown out, or buried many feet deep by drifting sand, a fair proportion lived and made a satisfactory growth, but most of them were so cut by the drifting sand the following winter as to die to the surface of the ground. We have this year established a nursery on the lands for the propagation of stock to be used in future work, in preference to using imported plants, and shall extend it as our needs demand. We have now growing in the nursery over 250,000 young trees and shrubs, mostly raised from seed. Our stock of trees consists mainly of Pines (P. rigida, P. Austriaca, P. sylvestris, P. Strobus, P. insignis and P. Pinaster), Alder, Birch, Hornbeam, Ailanthus, Oaks, Silver Maple and several varieties of strong-growing Willows and Silver Poplar. Of shrubs, we have Privets, Scotch Broom (Cytisus scoparius) in large quantity, Myrica cerifera and a few others, intending to put in next year several other kinds of native growth, as well as Tamarix Gallica and such others as may promise to be of service in this work.

We make a preliminary planting of Beach Grass, setting strong clumps eighteen to twenty-four inches apart. This makes sufficient growth the first year to nearly cover the ground and to reach a height of about two feet. The following season we plant among this such woody plants as Genista scoparia, Myrica cerifera, Amalanchier Canadensis, Rosa lucida, etc. Among these we intend to plant at the same time a considerable quantity of acorns of our native Oaks, to be followed in a year or two with the several varieties of Pine and other trees. Outside and to the windward of this we are making thick wind-break plantations of strong Willows, Silver Poplars, Locust, etc.

It is expected that in time this entire area may be covered with a forest-growth which will not only serve to prevent the sand from drifting inland toward the town of Provincetown, and eventually filling and destroying a useful harbor, but will at the same time furnish a practical example of reforesting waste and useless land, of which our state has many thousands of acres now producing nothing of value.

## A Season with the Native Orchids.—I.

Twenty-eight species of Orchids, representing eleven genera, have been found indigenous to the vicinity of Chicago. Orchis spectabilis, the Showy Orchis, opens the flowering season the latter part of April, and continues until late in May. It is a plant of the rich damp woods, rooting in the mold of decayed leaves and wood, and often growing in little patches. It makes a pretty picture amid the dry leaves and fresh verdure with its two shining, rich green leaves near the surface of the ground, and its pink or purplish flowers with white oval lips on the short stem between them. It is one of the handsomest of the Orchids, its showy flowers well entitling it to precede the others of the family.

Before the flowering season of Orchis spectabilis is over, that of Aplectrum hyemale begins. This is a plant more curious than handsome. Its single oval leaf, strongly ribbed or plaited, persists through the winter, and frequently leads to the destruction of the plant by children, who know there is a white savory bulb from which it grows, and sometimes an older one not so shrunken as to be unpalatable. One or two more shriveled bulbs remain attached, and their sticky nature has given the plant the name of Putty-root. The largest and freshest of these bulbs sends up a vigorous stem in May a foot or more tall, which bears several large dingy greenish or brownish flowers, their lips sprinkled with purple dots. The leaf at the base of the stem is now dying or dead, and the purple flower-stem may be the sole reminder of the presence of the plant. Like the Showy Orchis, it loves the rich shady woods, but is quite rare outside of the Beech and Maple woods east of the sand region.

Closely following the Putty-root are four species of

Cypripedium which come into bloom the latter part of May. All six of the species of the territory covered by Gray's *Manual*, except C. arietinum, are represented in our local flora. They can all be found in the Pine-belt of Lake County, Indiana, within half a mile of Lake Michigan, and in a strip but four or five miles long. Of the four species the Stemless Lady's-slipper, C. acaule, may flower as early as the 20th of May, and it continues for about three weeks. The two oval-oblong, ascending leaves, and the one-flowered scape, four to twelve inches high, which rises between them, give it an appearance quite different from the kinds with leafy stems. A green and pointed bract arches over the flower and points in the direction of the upper sepal, lying very close to it. The narrower parts of the perianth are greenish, but are veined and tinged with red. The shape and color of the inflated sac, nodding on the scape, make it one of the most beautiful of the Lady's-slippers. It is about two inches long, of a deep rose color, veined by a network of deeper-colored lines. When the bright sunlight shines through the lip it is suffused with a very rich color, for the deeper color of the veins blends with the general color, and the flower blushes almost to a crimson shade. Though only single-flowered, a dozen or more plants in bloom together in a narrow area produce a very showy effect. They grow in the deep or partial shade of the Jack Pine in sands enriched by a mulch of decaying leaves, where their nodding flowers make a charming picture. The haunts of the Stemless Lady's-slipper are usually the lower parts of deep depressions among the sand-hills. They are often nearly circular, and resemble kettle-holes. In the bottoms of the deepest of them water may accumulate in the wet season. From the borders of these temporary pools, or from the bottoms of the depressions that continue dry, the plants spread away and line the lower parts of the surrounding slopes, which are often very steep. It forms a strange setting, botanically and geographically, for this Cypripedium, and different from any I have seen it take elsewhere.

Cypripedium candidum, another early bloomer, the smallest of the Lady's-slippers, is from three to ten or twelve inches high. It is the only one that grows in the open prairie, where it occurs in boggy or hummocky ground or in wettish grassy land. It persists in the unplowed meadows after they have become quite dry, and may be found growing beside the Blue and the Arrow-leaved Violets or even with Viola pedata. In the Pine-barrens it frequents the bogs and damper sands, growing in the shade of White and Jack Pines, or even the Black Oaks, which have supplanted them. It has light green foliage. The small flower is very sweet-scented, the slipper rarely more than an inch in length. This is white or pinkish, translucent, and variously striped and specked with dark red inside, the red veins showing through the thin texture and giving it the pinkish tint. The base of the slipper is stained with yellow, and its opening is prettily bordered by a row of red dots. The rest of the perianth is brown-purple, the parts twisted and wavy, the two answering to petals long and ribbon-like. The stem is mostly single-flowered, one with two flowers being occasionally found. The small White Lady's-slipper is becoming scarce upon the prairies, and is likely to be extinct in such places, as plowing and pasturing soon destroy it.

The two Yellow Lady's-slippers, Cypripedium pubescens and C. parviflorum, bloom together, and are much alike. The former is generally a more robust plant, sometimes two or more feet high. I could never find much difference in the form of the sacs, though there seems to be a tendency in that of C. pubescens to be more flattened laterally. But it is usually much larger and more inflated when compared with the size of the plant, sometimes two inches long and nearly an inch broad. The sepals of C. parviflorum are brown-purple, those of C. pubescens more nearly green. Its flower is nearly odorless, that of C. parviflorum is fragrant. The latter plant is from a foot to a foot and a half high, the saccate lip rarely more than an inch long. C. parviflorum is often seen here in groups, a half dozen or so in little colonies or a score of them within an area of a few square feet. C. pubescens is much more solitary in behavior. In the sand region C. parviflorum takes more to the wet and boggy lands, though patches of it may be met with in the rather dry sand in the shade of the Black Oak. C. pubescens is scattered about in the Oak and Pine woods in the sandy region by the lake, appearing on the low sand-ridges such as visitors at the Columbian Exposition would find typified in the Wooded Island, and where these plants, doubtless, formerly grew. In such situations the plant is generally found growing close beside the Oak-tree, springing out from among its larger roots, as if it sought the protection and shade of the sturdy Oak.

The handsomest of the group, Cypripedium spectabile, flowers latest. It is here essentially a flower of June, and may be found in full bloom soon after the first of the month, so that its season is well over by the first of July. It was once exceedingly abundant in the damp places of the Pine-barrens, but it has been gathered for sale and for other purposes so recklessly, and the region has been so changed by various encroachments, that it is already scarce and seems doomed to extinction. It was most abundant under the Cedars and Pines by the borders of the sloughs, or amid the thin swamp grasses, or in groves of Tamarack or peat-bogs among Pitcher-plants and Cranberries. Few plants of its size have a more stately look, the stout stems, generally two or three feet high, being wrapped in pale green, hairy leaves, which rise so close to it as to nearly conceal the internodes, and are so arranged as to have a spiral appearance. The slipper is chubby, and wide in proportion to its length. Its beautiful roseate tinge, the broad pink stripes within shining through its texture, the setting in its perianth of snowy white, give this queenly plant a peculiar charm. The spreading parts form a kind of canopy beneath which the slipper hangs. The flowers often occur in pairs on the stem, but do not intrude on one another, being turned just far enough away so as not to interfere, though still facing the beholder.

Chicago, Ill. *E. J. Hill.*

## Foreign Correspondence.

### London Letter.

An Exhibition of Fruit.—A three-days exhibition of British-grown fruit was held the week ending September 18th, at the Crystal Palace, under the auspices of the Royal Horticultural Society. There were one hundred and eighty exhibitors, from distant parts of the country as well as from the metropolis, and the number of entries in the competitive classes was eighteen hundred. The quality of the fruit shown was of an exceptionally high order, and this was specially true of the apples, which have done well this year in most parts of the country. The President of the Society, Sir Trevor Lawrence, in commenting upon the exhibition on the opening day, said he believed that a finer collection of hardy fruit had never been tabled in any exhibition in the kingdom. He thought English fruit-growers had abundantly proved that when the seasons are fairly favorable hardy fruit could be produced here which could not be beaten in any part of the world. Referring to the correspondence which has appeared in the newspapers with regard to fruit-drying, he said that nothing very special had been done in this country in that direction, and that was partly due to the fact that people did not combine readily for such operations. His own opinion was that in a year of glut such as the present it was exceedingly difficult to market profitably; even in the case of good samples it would be a very great advantage if there were a possibility of sending the surplus fruit to be dried, even if it were only for domestic consumption. A great deal depended, not only upon the growing of fruit, but in its careful handling and careful marketing. No one would suppose the magnificent fruit that was shown was a fair average sample of the produce of the orchards from where it came.

Naturally the producers showed their best fruit. But, as they all knew, this year a very high average sample of fruit had been produced in a great many parts, and he thought that in these days farmers must look, not to the great staples of their industry, but to various branches of small cultivation. Something, at all events, might be done more than is done in fruit-growing and fruit-drying.

As I have said in previous letters upon the cultivation of fruit in England, no exhibitions are needed to prove that the best can be grown here. This is demonstrated in the gardens of the wealthy, where there is no stint of labor and other accessories. But to grow and sell fruit at a profit is the great difficulty in these days of foreign competition. There are many ways of losing money, and we are still searching for fresh ones. The cultivation of fruit in England for profit is an old, well-trodden way, and I am inclined to the opinion that the now recommended drying of fruits is only a bypath in the same direction.

It has been suggested in a paper recently read before the British Association that as growers of farm and garden produce have difficulty in selling it the state should undertake the duties of collecting and selling. A pertinent suggestion was made to the effect that if the Government could market the produce at a profit why not let them undertake its cultivation as well? The poor farmer and market gardener would then be relieved of all anxiety and worry and could become a state-paid official! It would, no doubt, be a gain to the revenue if Government could take the place of the middleman, who always gets a large share of the proceeds.

The premier prize for eighteen sorts of cooking and dessert apples grown in the open air was won with the following: Lord Derby, Peasgood Nonesuch, Alexander, Stone's, Bismarck, Belle Duboise, Belle Pontoise, Gascoigne's Scarlet Seedling, Washington, Mère de Ménage, Warner's King, Cornish Aromatic, Ribston Pippin, Wealthy, Baumann's Red, Winter Reinette, Cox's Orange Pippin and the Queen. This collection came from Maidstone, in Kent, and was remarkable for size and rich color.

The best collection of a dozen sorts of dessert pears comprised: General Todleben, Duchesse d'Angoulême, Pitmaston Duchess, Marie Louise, Maréchal de la Cour, Brockworth Park, Doyenne du Comice, Beurré Bosc, Beurré Superfin, Gansel's Bergamot, Madame Treyve and Beurré Rance. These also came from a garden in Kent.

The best peaches were Nectarine Peach, Sea Eagle and Princess of Wales. The first collection of plums consisted of splendid examples of Monarch, Golden Drop, Jefferson's, and Bryanston Green Gage. The best Damsons were Cluster King, Prune and Farley.

Pot-grown specimens of fruit-trees were splendidly exhibited by Messrs. T. Rivers & Son, Sawbridgeworth, the number and finish of the fruits borne by each small tree planted in a ten-inch pot being at least equal to the best possible trees grown in the open ground.

Messrs. Sutton & Sons exhibited a grand collection of tomatoes arranged on a screen, each sort being represented by about a square yard covered with heavily laden stems, showing the character of the sort much better than when selected fruits are placed upon dishes.

The largest and handsomest apple shown is Peasgood Nonesuch, and it was represented by hundreds of fine fruits. Next to this in point of interest and attractiveness is the recently acquired Bismarck, which is astonishingly prolific and of taking appearance. The two best of all dessert apples, Ribston and Cox's Orange Pippins, were well shown. Prizes were awarded for the best methods of packing fruits for market. Three papers were read, one on each day, the first being by Mr. Bunyard, the Maidstone nurseryman, on New Varieties of Fruit; the second was on Pruning Fruit-trees, by Mr. A. H. Pearson, the Chilwall nurseryman, and the third was a prize essay on Fruit-growing for Profit. These papers will be published in the society's journal.

New Orchids.—Masdevallia Lawrencei is the name under which Dr. F. Kranzlin describes a plant which he had received from Sir Trevor Lawrence, but which Mr. Rolfe described in 1880 under the name of M. guttulata as a new species allied to M. Tovarensis, but with flowers only half as large and colored yellowish white, with spots of purple. It flowered in the Glasnevin Botanic Garden, its origin being unknown. As a garden-plant it has little value, except to those who make a specialty of Masdevallias. Dr. Kranzlin's reason for the proposed new name is that Reichenbach had already used the name Guttulata for another species published in 1877. "If we go on in this way we shall have to invent a new Linnæus, wipe out the past, and begin all over again."

Odontoglossum aspidorhinum is a new species described by Mr. F. C. Lehmann, of Popayan, in *The Gardeners' Chronicle* as remarkably floriferous. He says, "not only does every pseudo-bulb produce two flower-spikes at one time, but they do so for two, and even three, years in succession." He has seen small plants bearing from twenty to thirty flower-spikes, forming a semiglobular flowering mass of great beauty. The pseudo-bulbs are two inches long; the leaves are narrow and six inches long, and the flower-spikes are from twelve to eighteen inches high, each bearing from nine to fifteen flowers, which are about an inch and a half across; the sepals and petals small and yellow; the lip panduriform, fringed and pointed, white, spotted with lilac-crimson. It is a native of Colombia, where it grows at a high elevation on trees on the eastern declivities of the western Andes of the Cauca.

Messrs. Low & Co., of Clapton, have lately flowered plants of a Dendrobium imported by them from north Borneo, and which was submitted to Kew for name. Mr. Rolfe has described it as a new species, and he has given it the very appropriate name of Sanguineum in allusion to the crimson color of its flowers, in which respect it is unique in the genus. D. sanguineum is allied to D. crumenatum, and has slender stems about a yard long, swollen at the base; the leaves are linear oblong, and the flowers, which are axillary and solitary, are an inch long, with obovate crimson petals and sepals, the lip being small, wavy, white, with purple lines and spots. Mr. Rolfe thinks that if the plant proves easy to cultivate and flower it will find favor as a garden Orchid. No doubt, the hybridizer will be interested in it in any case.

London. *W. Watson.*

## New or Little-known Plants.

### Yucca Whipplei.

In spring and early summer the dry hillsides of southwestern California are made glorious with the tall, narrow, stout-stemmed panicles of this plant, which often rise to the height of ten or fifteen feet above the rosettes of its narrow pale-green leaves. The habit and general appearance of this Yucca, when it is in flower, is shown in the illustration on page 415 of this issue, made from a photograph taken in the neighborhood of Pasadena, where Yucca Whipplei is exceedingly abundant on the low foothills of the mountains. Less imposing in habit, of course, than the arborescent species which are so common on the deserts of the south-west, Yucca Whipplei surpasses all the known Yuccas in the height and beauty of its panicle of flowers. To the botanist, too, it is a plant of peculiar interest as the only representative of a section of the genus (Hesperoyucca) distinguished by the rotate and spreading perianth, the small acute filaments, didymous transverse anthers and peltate, stalked stigma of the flower, the three-valved capsular fruit and thin seeds.

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The Witch-hazel in full flower, while its yellow leaves are falling in October, reminds me of the earliest spring. Its blossoms smell like Willow catkins, and in color and fragrance they belong to the saffron dawn of the year, suggesting amid falling leaves and frost that the eternal life of nature is untouched and all the year is spring.—*Thoreau.*

## Plant Notes.

Pseudolarix Kæmpferi.—This is a tree which might safely be planted in the northern states much more often than it is. It is the only representative of a very peculiar genus, with the habit of a Cedar, the foliage of a Larch and the cones of a Fir. It is well called the Golden Larch, for it looks to the unsophisticated observer more like a Larch than any other tree, and in the autumn the leaves turn a beautiful golden color before falling. This tree was first made known to Europeans by Robert Fortune, who found it in the gardens of a Buddhist monastery in the western part of the Chinese province of Chikiang, where there were trees from one hundred and twenty to one hundred and thirty feet tall, with trunks two feet in diameter, free of branches for fifty feet above the ground. The original home, however, of the Golden Larch was probably in some colder region, for it flourishes in New England, where it is not affected by the hottest or driest summers or the coldest winters. It is as hardy as the Ginkgo, and, curiously, like the Ginkgo, it is known only as a cultivated tree, and, so far as we have been able to learn, no American or European has ever seen these two remarkable monotypic deciduous-leaved conifers growing beyond the limits of cultivated grounds. The name of the remote mountain valley of western China, Mongolia or Thibet, from which the priests of Buddha brought these two trees to ennoble their temple gardens, is a secret that has been well guarded. A region which can produce such trees can, perhaps, produce other valuable plants, and its discovery and exploration is well worth the efforts of the enterprising and ambitious collector of plants. Pseudolarix Kæmpferi, which appears to grow more satisfactorily in our northern states than in Europe, has remained a rare tree, as it has proved difficult to propagate by grafts, and until recently seeds have been scarce. Of late years, however, a tree in the nursery of Rovelli Frères, at Palanza, on the shores of Lake Majiore, has produced good crops of seeds; and the specimen in Mr. Hunnewell's Pinetum at Wellesley, Massachusetts, two years ago began to bear fertile cones, from which seedlings have already been raised. It may be expected, therefore, that this noble and beautiful tree may soon become common enough to be within reach of every one who wants to plant it. The largest specimen in the United States is growing on the grounds of the old Parsons' Nursery at Flushing, Long Island. This tree was bought in London at an auction of plants offered by Fortune in 1859, and it was then three feet high. It is now a broad-branched, handsome specimen about fifty-five feet high, with a trunk diameter of two feet, and its branches cover an area fifty feet across. This tree has also borne seeds.

No. 56.—Yucca Whipplei in Southern California.—See page 414.

Citrus trifoliata.—This shrub or small tree is reliably hardy as far north as Philadelphia, where it sets and ripens fruit with tolerable regularity, and there are a number of good specimens near this city, one of them in Central Park, but, so far as we know, they bear no fruit. Mr. Oliver writes that on the grounds of the Department of Agriculture at Washington this year the bushes are loaded with the small yellow oranges, and make a very showy appearance. These have been planted in their present quarters some twelve or fifteen years, and they average about fifteen feet in height. As they get older they produce fruit in greater profusion. The flowers appear very early in the season; so early, in fact, that they are sometimes nipped by late frosts. This Citrus, in a few years after planting, forms an almost impenetrable hedge, as it bears pruning wonderfully well. Each fruit contains a number of seeds, which, if sown as soon as gathered, will make plants ready for setting out within a year.

Hypericum adpressum.—This herb, with slender rigid stems, slightly woody at the base and about a foot tall, spreads rapidly by underground stolons; and a bit of the

root planted in good soil will become at the end of a couple of years a dense mat four or five feet across. It has lanceolate bright green leaves and terminal few-flowered cymes of small bright yellow flowers. It grows in rather moist soil, and is distributed from the island of Nantucket, off the coast of southern Massachusetts, and Rhode Island southward. Its compact habit, low stature and ability to spread rapidly, suggest that this pretty little Hypericum may be a good plant to cover the ground of shrub-beds. The number of plants that we can use at the north for this purpose is not large, and the discovery of additions to the number is desirable. The best covering plant, of course, is the Periwinkle, but it takes some time to form a mat that weeds cannot grow through. The Periwinkle being an evergreen, a bed covered with it catches falling leaves in the autumn and holds them all winter, and the cleaning of such a bed in the spring is a slow and expensive operation. The Japanese Honeysuckle makes a good carpet, as it grows rapidly and covers the ground in one season, but it has the disadvantage of being so rampant that it grows into and over the shrubs above it unless the stems are cut over every year. This is the trouble, too, with the Japanese Rosa Wichuraiana when used in this way. It soon clothes the ground with a beautiful green carpet, but its long vigorous stems, which often grow twenty feet in a season, soon smother every plant that comes in contact with them. Some of our dwarf native Roses would be good plants for this purpose, but they usually grow too tall and consume too much plant-food; and what is really needed is a deciduous-leaved shrub which will spread rapidly by underground stolons into dense mats and will not, under the most favorable conditions, grow more than eight or ten inches high. Hypericum adpressum comes nearer to filling these requirements than any other perfectly hardy plant we have seen recently.

Aglaonema pictum.—This is a fine foliage-plant of the Arum family with curiously mottled leaves. It is very dwarf in habit, growing to a height of eight or ten inches. If the shoots are topped the plant will form compact masses of very handsome foliage. The leaves are about six inches long, ovate-lanceolate, with cordate base and rather long petioles. The color is a deep velvety green, with silvery gray, well-marked spots and blotches chiefly along the midrib, and in a lesser degree over the whole surface of the blade. The plant flowers freely, and will fruit if fertilized artificially. The spathe is about an inch long, spoon-like, of a creamy white color, but inconspicuous; the spadix short, club-like, greenish. For house-culture this is likely to become a very satisfactory plant, and it is pretty for any indoor decoration. Planted in pans so as to form dense masses of foliage, and with the ground covered with some creeping species of Club-moss—for instance, Selaginella denticulata or S. cassia—it forms a tasteful ornament for a dinner-table. Light vegetable soil is the best, and it is readily propagated by cuttings.

## Cultural Department.

### Oncocyclus Irises.

NOT many hardy plants have been more disappointing in gardens than the Oncocyclus Irises. A few gardeners, happily situated, or by dint of careful management, occasionally flower them, apparently, however, not for a long succession of years. Many of my flower-loving friends report failures most discouraging. The failures are especially aggravating, as the rhizomes are perfectly hardy, and many spines with most beautiful flowers are now available. It is rather humiliating to be nonplused and thwarted by a plant which is perfectly ready to grow and do its part if the gardener supplies the proper environment. Among several reasons for lack of success with these plants the principal one is probably that good strong rhizomes have not been planted. Such rhizomes are very scarce; in fact, rare, and can seldom be secured from either dealers or collectors. Judging from the somewhat numerous pieces of collected plants which have reached here the rhizomes are seldom vigorous in a wild state. As they improve under cultivation there is a possible question whether the drought, to which they are accustomed, is entirely beneficial. Apparently the first requisite to the successful cultivation of these O. Irises is to work up a stock of strong, vigorous roots from the dormant weak pieces usually received. If these are planted when received, before the ground is cold, they will make a weakly growth of leaves, to be ruined by winter storms. As they will not have made strong roots, and have little reserve force in the rhizomes, they will not recuperate, and if dried off at the usual time will often disappear. After many such failures I have been convinced that the procedure was wrong. Lately I have found that by keeping the rhizomes dormant, and planting them out very late—early in December—they remain dormant and appear in the early spring after frosts are finished. Hence they grow on without interruption or weakening, and make strong roots, and with a stock of these future operations are simple. Prudent cultivators, having secured strong plants, will do well to follow the teaching of Herr Max Leichtlin, who advises covering them overhead in June with a sash, which is to be removed in August or September, thus giving them a forced rest. In this climate I am inclined to think that if they are allowed to grow somewhat longer and can be checked somewhat later, so that they will have made little or no foliage-growth before winter, successful flowering will be more certain. This will allow the rhizomes to gain strength after flowering, and later the foliage, not being advanced, will be less liable to injury. Any one who flowers a collection of Oncocyclus Irises in the open successfully for a succession of years will have an interesting experience and have reason to feel much pride in his skill as a cultivator.

Elizabeth, N. J. *J. N. Gerard.*

### The Vegetable Garden.

KILLING frosts have now destroyed all tender crops in this section, and the vegetable garden begins to look bare. Plants of Sweet Corn, Beans, Tomatoes, Melons, Cucumbers and the like we clear away to the rubbish-pile before they rot and become disagreeable to handle. We always save a quantity of corn-stalks of the taller sorts; they are useful to scatter over beds of Strawberries or half-hardy perennials after they have had a covering of dry leaves.

Early and second-early Celery of the White Plume and Self-blanching kinds, which is being blanched by means of boards, will now require some earth thrown up to the boards. A few stout sticks driven inside the boards will keep them from caving in on the plants. A quantity of dry leaves worked loosely among the plants will preserve them for some time to come; later in the season a coating of litter-manure can be given. We are just commencing to earth up our winter supply of Celery; before doing so we remove all decaying stems and tie up the plants loosely. The final earthing up is not done until November. Of course, the plants should be perfectly dry when earthed up and the soil carefully packed among them so as not to break the somewhat brittle stems. We have had so much better success with keeping Celery out in the open where it has been growing that we no longer lift and house any of the crops now. Lifted plants rot badly, the roots too often die, and the plants quickly follow. When kept outside the root-action is not checked, and if protected with a good coating of strawy manure or leaves, and boards to throw off some of the moisture, we find it keeps in good condition until spring. Of course, the ground where late Celery is grown should have a gentle slope, so that water will not stand on the ground during winter. I have seen much better heads kept in this way than by any lifting method. In this locality Boston Market and Giant Paschal are the standard winter sorts, but a second season's trial of that fine Michigan variety, Kalamazoo, has proved it to be far superior to either of these sorts. It has an erect habit, has shown no sign of disease, is of fine flavor and unexcelled as a keeper.

Parsnips, carrots, turnips and beets we keep in an open shed packed in sand and covered over with a thick coating of dry leaves. November is early enough to lift these. Parsley should now be lifted and planted in a cold frame in some well-enriched compost. We strip off all the leaves but a few of those next the crown and trim off the tap-roots. The strongest plants and those showing the best-curled leaves should be selected. By placing a few inches of dry leaves over the plants in December little further protection outside of the sash is needed during winter, an abundance of nice parsley can be had. For convenience in severe weather, a few large pots or boxes may be filled and placed in a spare corner in a cool house. Lettuces which are heading up, if lifted with a ball of

earth and planted in frames, will give useful heads until Thanksgiving. A few dry leaves over the heads in the open will protect them from all the frost we are likely to have for some time yet. Late-sown batches should now be pricked into frames prepared for them. Endive may be kept in excellent condition for some time by lifting it on a dry day and planting in a cold frame. A coating of sand over the surface will prevent the spread of mold. In Great Britain endive is kept all winter in a cool cellar by carefully packing it in sand, two or three inches of the leaves only being allowed to stand above the sand. The plants are always perfectly dry when lifted, tied up, and not allowed to touch each other in the sand. In this way they blanch better than by any other method I have seen tried.

Asparagus tops should now be cut down, all weeds cleared away and the beds slightly loosened. We give them a moderate coating of rotted manure in November, not so much for protection, but to fertilize the ground. We loosen the surface to allow the manure to leach the roots. Seaweed is one of the best of manures for Asparagus; if this cannot be had a little salt may be mixed with the manure. Plantings of Asparagus may be made either now or in spring; I prefer spring planting.

Brussels Sprouts and all members of the Brassica family will be benefited by having the decaying and lower leaves removed. From the middle to the end of November we lift these and heel them in frames or outdoors in a warm situation, covering well with dry, light protecting material. Leeks are very hardy, but are best heeled in close together; they do not decay as Celery does when lifted. Cauliflower may be partially protected by breaking down the centre leaves over the flower; those not fully headed up should be heeled in a cold frame early in November.

Early Tomatoes sown in July now have fruit of good size, and these will commence to ripen toward the end of the month. Our second batch has just been given a shift into fruiting pots. When the pots are well filled with roots liberal supplies of stimulants should be given. From November to the end of February artificial pollination is necessary to secure a fine crop; this is best done about noon on a bright, clear day. Now is a good time to make an additional sowing to yield ripe fruit about the end of March. May's Favorite is the most satisfactory sort we have grown for spring fruiting.

Manuring and deep digging or trenching unused ground may now be attended to. If cut-worms and wire-worms have been troublesome a good coating of lime can be given; and the lime will be useful to the sod also whenever it is of a heavy, clayey nature. We prefer to do as much work of this sort as possible before severe frosts, so as to relieve the pressure of work in the busy spring season.

Taunton, Mass. *W. N. Craig.*

## Indoor Work.

THE housing of the tender plants that have been in use in the garden during the summer will now be nearly or quite completed, but after these plants are safely under cover it becomes an interesting question to many a grower with but a small area of glass at his disposal how to arrange for this sudden influx of plants without interfering with those already in the houses. It is at such a time that the value of a well-built and slightly heated pit or deep frame becomes apparent, and more than pays for the slight cost of its construction.

Besides this plan for economizing space some private greenhouses here, and some commercial establishments in Europe, have shelves of heavy glass suspended from the roof by brackets or chains, a much more neat device and much less obstructive to light than wooden shelves. Shelves of this kind are very useful for many light-loving plants, and induce a short and stocky habit.

Among the lifted plants the Cannas are important, and some of them should be divided up into convenient sizes, potted in rich loam and grown on for conservatory decoration during the winter and spring. Particularly large and brilliant flowers may be had under glass, and the whole spike of flowers and foliage together can be put to good use in filling a large vase with cut flowers for a church or hall decoration.

The various bulbs for winter and spring forcing should be potted at once. Continued exposure to the air is injurious to them, and particularly so to the bulbs of various Lilies, which lose much of their vitality when long exposed.

Calla Lilies are indispensables in most conservatories, and it is well to know that the California-grown bulbs are now offered so cheaply and of such good quality that it is hardly worth while to keep old bulbs over from year to year, as the fresh bulbs will probably yield more flowers.

A few specimens, at least, of the brilliant-hued Poinsettias should be found in every greenhouse where a temperature of sixty degrees can be maintained. Poinsettias are quite susceptible to draughts and sudden changes of temperature; though they do not require extreme heat they should have full light and generous treatment as to soil and moisture. Euphorbia Jaquinæflora, another admirable plant for winter flowers, needs like treatment. Some plants of Begonia incarnata and B. Gloire de Sceaux should now be in their blooming pots, and will need plenty of water and some weak liquid-manure at intervals. Cyclamens will also be rapidly coming into flower, and tobacco stems chopped into short lengths should be spread among the pots as a safeguard against aphides. Chrysanthemums and Cinerarias need similar applications of tobacco against the insects, which are the most dangerous enemies to the flowers and foliage of both these plants.

Roses for winter flowering, if well established, can now be allowed to flower, and if on side benches will need some tying to keep the shoots away from the glass. If specially large flowers are desired on the Carnations, some disbudding must be done, but those used as pot-plants in the conservatory should not be disbudded, as in this case quantity of bloom is more important than the size of the flowers. Most foliage plants are not potted until spring, but they must be kept scrupulously clean, for with the additional fire-heat comes a fresh outbreak of insects, and scale and mealy-bug multiply a hundred-fold, in an incredibly short time.

Of course, a good supply of potting material should be put under cover for the winter, and any delayed repairs, like glazing, painting or alterations to boilers or pipes, must be attended to at once.

Holmesburg, Pa. *W. H. Taplin.*

**Polyscias paniculata.**—This plant, more commonly known as Terminalia elegans, is useful both for the conservatory in winter and for planting out in summer, since it will color beautifully out-of-doors. The leaves are pinnate, having from five to nine leaflets, the terminal one being about six inches in length. There is little danger that it will ever become common, as the shoots branch very little and there is a difficulty in rooting cuttings, except those made from the tips of the shoots.

**Tricyrtis hirta.**—The Japanese Toad Lily is among the latest of herbaceous plants to come into bloom. The flowers are not showy, but there is a certain individuality and quaintness about the plant which have won for it many admirers. During the summer months while making its growth the plant has rather an ornamental appearance, the pretty shaped leaves being arranged alternately on upright stalks. The curiously shaped purple-spotted flowers are produced in the axils of the upper leaves. This species will not stand a protracted drought, for, without a good supply of moisture, the leaves lose their beauty, and the flowers, even when they appear at all, are very small.

Botanic Garden, Washington, D. C. *G. W. Oliver.*

**Frost Injuries to Pears and Apples.**—It is not uncommon to see pears and apples surrounded by a narrow russet zone. In pears this zone is nearly always at the apex, while in the apple it may be situated at the apex or between the apex and stem. This belt is due to an injury to the epidermis of the fruit in its young stage, and is caused by the freezing of dew collected on these spaces. The fruit at this time is upright, and the place where the dew collects is probably determined by the formation and position of the fruit. It is interesting to note that the cells in the frosted zones multiply and produce cells of their own kind, thus increasing the width of the zone during the growing period. The reason for this is not yet known.

Cornell University. *G. Harold Powell.*

# Correspondence.

## Seasonable Notes from Wellesley, Massachusetts.

To the Editor of GARDEN AND FOREST:

Sir,—After a season's growth, or it may be a season's rest, out-of-doors, tender plants of all kinds are returned to the greenhouses, and they again resume their attractiveness. During a stroll through the greenhouses at Wellesley we find many rare and beautiful plants, and Mr. Harris, who has been Mr. Hunnewell's gardener more than forty years, is able to go back to days when horticultural operations were conducted under very different conditions from those which now prevail, and we naturally find here many old plants which carry us back to those days.

In one of the houses stands a magnificent pan of Hippeastrum platypetalum. It is one of the earliest and best, with

stout scapes of erect flowers of salmon-red shade. Mr. Harris does not think this species has ever been used as a parent of any of the newer hybrids, as he has never seen any like it. There are three species of Allamandas now in bloom. A. Williamsii is the most dwarf, and when grown in a pot makes an excellent bush specimen. It was so exhibited last summer by Mr. William Martin, gardener to N. T. Kidder, Esq., of Milton, Massachusetts, to whom the Massachusetts Horticultural Society awarded a silver medal. I have not seen it used as a pillar or roof plant, but, no doubt, with generous treatment, such as it would get when planted out, it would prove as effective as any of the coarser varieties, some of which are really too rampant. The flowers are trumpet-shaped, about two inches in diameter, measured across the limb of the corolla, and deep yellow in color. It blooms abundantly nearly the year round. A. cathartica, var. Hendersoni, is a much stronger grower. It is here trained as a standard, and as such is very effective. It bears the largest and handsomest blooms of all the sorts grown, measuring nearly four inches across the corolla limb. They are clear sulphur-yellow and elegantly recurved and revolute. A. Schottii is the coarsest grower of all, and similar in habit to Henderson's variety. The flowers are about the same size, though not so handsome in outline, and have a distinguishing blotch of orange-yellow at the base of the throat. There is here a large plant in the tropical house, which, if not regularly pruned, would soon take possession, to the exclusion of everything else. Ixoras, now seldom seen, are here represented by I. Williamsii and I. coccinea. To exhibit well-flowered specimens is a rare achievement, and a group of these was always a commanding feature in the old-time exhibitions. In another house there is a group of about twenty plants of the uncommon greenhouse Rhododendrons of the Javanicum-jasminiflorum type. These seem to do better when given continuous greenhouse treatment, with partial shade, as they are undoubtedly undershrubs in their native country. They need generous warmth during the winter months. Although they never make the gorgeous display which the hardy hybrids do, yet they are continuously in bloom. As the principal part of their growth is made in summer, abundance of water must be given at this time, and a lack of it would soon be apparent in a loss of leaves and stunted growth, from which the plants recover slowly. The specimens here are all in perfect health, showing that as nearly as possible their exact requirements have been secured. These greenhouse hybrids are characterized by scattered leaves and regular monotone flowers. The corolla tube is longer, the limb shorter or narrower, and the truss looser than in the hardy kinds. Monarch is clear salmon, and Favorite a beautiful cerise-pink. R. balsaminœflorum album and R. aureum mark a new departure in this group. Both have double wax-like flowers, which hang on the plants for more than a month.

Special attention is given to Dracænas and Cordylines, and one house is almost wholly devoted to them. Some of the best varieties are seedlings raised by Mr. Harris many years ago, when these beautiful plants were less plentiful than now. Dracæna Cooperi and D. magnifica were the varieties from which nearly all his bronzy leaved varieties were raised. Mrs. H. H. Hunnewell is considered the handsomest of all. The leaves are very broad, elegantly recurved and delicately tinted with red. D. monstrosa is another of great merit. Its name is intended to indicate its proportions. Mrs. R. G. Shaw, another handsome variety of robust habit, is neatly striped with red. D. porphyrophylla superba is a renamed seedling, with the varietal name added to indicate its superiority to the type. In the estimation of many this is the best of all the bronze-leaved forms. D. Baptisti, D. Youngi and D. imperialis, D. Waban and D. Wellesliana, the two latter seedlings raised by Mr. Butler, gardener to Mrs. Durant at Wellesley, add variety to this section. D. Harrisii is, without doubt, the finest of the variegated green and white varieties. It is a hybrid raised here between D. terminalis and D. regina. D. Robinsoniana is a splendid variety of erect habit with striped leaves of orange, red and green. D. gloriosa resembles this in coloring, but is entirely distinct in habit, having broad recurving leaves. The true D. indivisa with a yellow midrib is very rare in cultivation. One large specimen here is very attractive, and several smaller ones are even more graceful. As a vase-plant it is unique. D. Sanderiana, an introduction of recent years, is represented by a moderate-sized plant. It is of slender habit, with scattered ovate-lanceolate, twisted and wavy, white and green striped leaves. Its habit is distinct from all other Dracænas in that it branches freely from the root-stock. Specimens made up of three or more plants in a pot are highly decorative. D. Goldieana is a very distinct species from south Africa. The broadly ovate white and green barred leaves make small specimens of these plants among the best for table decorations. Two species in Mr. Butler's greenhouse are especially worthy of note. These are D. spectabilis, a clear green-leaved variety resembling some of the Terminalis group; the leaves are broadly lanceolate, the habit is excellent, and it should be most useful for grouping. D. umbraculifera is an uncommonly handsome species with leaves more than four feet long; it resembles somewhat the D. indivisa type, but the leaves recurve, umbrella-fashion.

Wellesley, Mass. *T. D. Hatfield.*

## A Few Climbing Plants.

To the Editor of Garden and Forest:

Sir,—Among the useful climbers which I lately saw flowering out-of-doors in the Botanic Gardens here were three Ipomœas. I. rubro-cœrulea daily displayed hundreds of flowers. On some mornings they are all, or nearly all, of that deep color which has been commonly described as heavenly blue. At other times the blue is dashed, blotched or merely touched with an exquisite shade of rose, and occasionally it shows a flower of this color with scarcely a hint of blue. I. setosa is a vigorous grower, with every stem clothed with a close growth of reddish hairs. I. paniculata is another decorative species of rapid growth, with distinct, palmately divided leaves, and while its flowers are of a color disliked by some, this defect is less noticeable at the distance from which the plant is seen to best advantage. For outlining the pillars and eaves of porches this Ipomœa is admirable. It never forms the heavy, shapeless masses of foliage that I. noctiflora, the Moon Flower, always develops before the season is ended.

Luffa cylindrica, commonly known as the Dishcloth Gourd, would be out of place where the Ipomœas look best, but it is, nevertheless, a useful and handsome plant. Clambering over a garden-fence, or in some similar situation, it has an air of elegance that makes it too good to be slighted, and its clusters of golden-yellow flowers are in form much like those of the aristocratic Allamanda nerifolia, but their color, though good in itself, is crude in comparison with the soft, pure yellow of the exquisitely textured Allamanda blossoms.

Several varieties of Aristolochia flower here luxuriantly when planted out-of-doors. A. elegans deserves its name. Its handsome, broad, chocolate and creamy flesh-colored flowers are freely produced, and have none of the disagreeable odor that characterizes those of most Aristolochias. A very unusual floral spectacle was furnished by a hedge a hundred feet long of A. cymbifera in full flower. The plants, from cuttings started in early spring, are trained on two wires stretched at one and four feet, respectively, above the ground, and the entire hedge is a series of festoons of fantastic flowers which have an odor that can only be described as offensive.

A stone wall that serves as the barrier between the garden and the street is lined for a space with old plants of the Japanese Trumpet-creeper, Tecoma grandiflora, and the brilliant masses of their flame-colored flowers make one marvel why this plant is seen so rarely as compared with our own Trumpet-vine.

Brighton, Ill. *Fanny Copley Seavey.*

# Meetings of Societies.

## The American Dahlia Society.

THE first annual meeting of this society was held on Wednesday last in Philadelphia, at the rooms of A. Blanc. This society was organized last spring by a few persons residing in the neighborhood of Philadelphia, for the purpose of popularizing the Dahlia, and of collecting and comparing information concerning the plant. Meetings have been held from time to time of those who chanced to be drawn together by common interest, but this is the first stated and regular meeting of the society. Early in the season it was intended that a large exhibition should be held this fall, and it was hoped that it might rival the Chrysanthemum shows in general interest; but the unprecedented drought in the neighborhood of Philadelphia has made such an exhibition impossible. So a few persons came together for the purpose of transacting some necessary business and to keep the society moving until it shall have the opportunity to make itself felt by a worthy display of flowers and plants. About a hundred and fifty varieties of Dahlias were on exhibition, however, having been brought in by growers for purposes of comparison. Many of them were unnamed seedlings. The largest lot, comprising 101 varieties, was brought in by the Secretary, Lawrence Peacock, Atco, New Jersey. Other exhibitors were A. Blanc, Philadelphia;

Albert Knapper, Frankford, Pennsylvania; C. B. Taylor, Germantown; Rev. C. W. Bolton, Pelhamville, New York.

One who studied these Dahlias would discern four general types or classes—the old ball-flowered type, the so-called Cactus type, the Pompons and the single-flowered sorts. The most decorative and artistic of these are the Cactus-flowered and single types, and the former are now popular with all growers, although it is said that flower buyers still prefer the formal ball-like varieties. The Cactus Dahlias bear a strong resemblance to the more formal Chrysanthemums, and when they are better known they may be expected to share some of the praise which the Chrysanthemum receives. This type originated from the famous Dahlia Juarezii, although that old form would not now be considered the typical one for a Cactus Dahlia. Tastes have changed since its advent, and breeders of Dahlias have made marked departures from the original. The Cactus Dahlia of a few years ago was characterized by an open, rather loose flower, in which the florets were of unequal lengths and overlapping, and the corollas flattened out at their extremities, instead of being tubular or funnel-form, as in the older types. These features are still retained in the main, but the florets must now be longer, with revolute margins or tips and a tendency to twist. In other words, the Dahlia is undergoing an evolution toward freedom and oddity of outline similar to that which has characterized the recent history of the Chrysanthemum.

The Pompon Dahlias are simply miniatures of the old ball-shaped types, but their earliness and freedom of bloom will certainly make them favorites. To many persons the single Dahlias are the most satisfactory of all the varieties, but they find only a limited sale in the general market. A true single Dahlia, as understood in England, should have but eight rays, but most of those which one sees at exhibitions in this country have more than that number.

Most of the Dahlias now raised in this country by the large growers are used for stock, that is, to produce salable bulbs, but the time is surely coming when the Dahlia will have a place of importance in the cut-flower trade and for decorative gardening. The varieties may be cast into three sections in respect to the size of the plants—the dwarfs, eighteen inches or less high; the half-dwarfs, two and a half feet high or less, and the standards or tall kinds, some of the last sometimes reaching a height of twelve or fifteen feet. A fourth class might be made, comprising the Tom Thumbs, which grow twelve inches or less high. The tall kinds are generally most useful for cut flowers, because the stems are very long, while some of the dwarfs are excellent for bedding, and the short-stemmed flowers are useful in the making of floral pieces. The half-dwarfs—a race which is receiving much attention at Mr. Peacock's place—afford some varieties which give excellent stems for cutting, and they are also useful in high bedding and for borders. During the summer and autumn Mr. Peacock has sold cut dahlias for a higher price than that ruling for roses. They often retail for as much as one dollar a dozen. Better results in cut flowers are to be had if the plants are given ample room—at least two by four feet. At this distance they also stand the dry weather better.

Among the varieties on exhibition, the following may be mentioned: Nymphæa, a very fine Cactus Dahlia, originating in Salem County, New Jersey, from seed of Mrs. Hawkins, and now very popular for cutting—very delicate pink, full double, rather large, resembling a Water-lily in form; Mrs. Hawkins, like Nymphæa in shape and size, but with a light yellow centre and pink border; Miss Penne Baker, a novelty of Mr. Peacock's, rose-pink, with flesh centre, ball-shaped, very delicate and handsome; Madame Moreau, a very large pink-red, ball-shaped Dahlia of most regular size, and one of the best for cut flowers; Pluton, perhaps the best clear self-yellow globular Dahlia, excellent for cutting; Penelope, good for cutting, ball type, white, tipped lavender, excellent. Among the Pompons, the leading ones were Klein Domatia, a very free bloomer, pale salmon; Fairy Tales, pale primrose, very free bloomer, probably the earliest variety; Aillet's Imperial, pinkish white, tipped with deep pink purple; Sprig, one of Peacock's, rich buff, tipped deep pink; Little Prince, very early, tall, the flowers of perfect shape, but variable in color; Alba imbricata, one of the best of this class, white, free bloomer. Of the large-flowered dwarfs suitable for bedding, Souvenir de Solferino attracted attention. It reaches a height of only eighteen or twenty inches, and covers itself with great dark red flowers. Other good varieties for cut flowers are Lucy Fawcett, straw-colored, striped light red; Princesse Bonne, clear yellow, tipped creamy white; Keystone, variegated; Mrs. Langtry, yellow, and tipped pink in the centre, outer florets darker.

The interest in Dahlias in this country is very small. This arises partly from the fact that no firm has systematically pushed the newer varieties, some of which possess uncommon attractiveness. A generation and more ago the Dahlia was one of the best-known and most-prized of all garden-plants, and in the rural districts in New York and Pennsylvania one may still trace the effects of this early popularity in the general interest which country folk take in the plant. But these varieties which one sees in old yards are mostly of one type, although they may vary widely in color. They represent the old ball-shaped Dahlias, with perfectly regular and funnel-like florets. There is no more striking example of the tendency of modern taste toward freedom and irregularity of outline than is seen in the Dahlia, and this is one of the very points which this new society can present to the public. The Dahlia will always remain a favorite flower with those persons who like to grow their own plants, because it can be had in perfection without artificial heat, and the season of bloom may easily be extended from June until frost. The named varieties are numerous and of many diverse kinds. The plant, therefore, is one which is worthy of more general attention in this country.

Something like 2,000 named varieties of Dahlias are now known in Europe, where the plant is much prized. In this country the largest single collection is probably that of Lawrence Peacock, who has about 600 varieties this year. A. Blanc has six acres of Dahlias this year, comprising some hundreds of varieties. Other important growers are William Bassett & Son, Hammonton, New Jersey, and W. Wilmore, Denver, Colorado. Within a year or two, however, there will undoubtedly be many large growers interested in the Dahlia, for it is rapidly emerging from its long obscurity.

Cornell University. *L. H. Bailey.*

## Recent Publications.

*Game Birds at Home.* By Theodore S. Van Dyke. New York: Fords, Howard & Hulbert.

One may feel inclined to question the accuracy of Mr. Van Dyke's statement in his preface to this pleasant little book that to the majority of sportsmen the love of nature is the principal element in the love of hunting. There can be no doubt, however, that many readers who do not aspire to be called sportsmen will find the easy, unaffected descriptions of the homes of the game birds—that is, the natural scenery through which the sportsman wanders—the most alluring feature of the book. One who reads these descriptions of the haunts of a dozen of our game birds is led among timbered hills, through the tall grasses of endless prairies, the grim Cactus-fields of the west, the Manzanita thickets of California, the southern river-bottoms fragrant with purpling Fox Grapes, the seashores and inland lakes and sloughs frequented by the water-birds. There is no attempt at fine writing; none of those melancholy and painfully wrought word-pictures of scenes that never existed; but, in their stead, suggestive and illuminating phrases dropped here and there which kindle the imagination, so that the reader cannot help filling out the picture from the stores of his own experience, enabling him to see over again in the mellow light of memory scenes that have left their impressions on his mind, and which he is only too happy to recall. As we read of hoar-frosts sparkling on buckwheat stubble, all the pomp and pathos of an American autumn passes at once before our eyes. The gleaming of Blood-root blossoms above sodden leaves, the wavering checkers of light upon the forest floor, the brook which gleams through groves of Wild Plum, Crab Apple and Hawthorn, orchard-like groups of Bur Oaks on prairie swells, the ghostly arms of dead Cottonwoods on the banks of broad rivers—touches like these all genuine, all typical of scenes or seasons, revivify old impressions of outdoor beauty and outdoor life that we have at some time enjoyed. Of course, all this is but an atmosphere, and yet it lends charm to the story of the birds, and makes more vivid and real the fascinating accounts of their appearance and behavior, which is evidently Mr. Van Dyke's chief joy as a sportsman. No doubt, the expert hunter may find here hints to help him in his pursuit of game, but the author need not have told us that, although the book was written for sportsmen, it was

written rather to touch certain tender chords of memory than to convey information. Nor was there any need for Mr. Van Dyke to have stated that he was no murderer. No thirst for blood is manifested in all these pages, and there is nothing among all the accounts of successful shooting to cause indignation or pity, but only admiration for the skill of the man and the intelligence of the dog, which combine to make a prosperous day's sport. Altogether, this is a book to be thoroughly enjoyed by all who take a wholesome delight in the country and in its wary inhabitants whose capture requires the exercise of so much intelligence and skill.

## Notes.

A neat little booklet on the care of house-plants has been issued, for the use of their customers, by Bertermann Brothers, florists, of Indianapolis, Indiana.

One of the prominent pomologists of Russia, Mr. Jaroslav Niemetz, has been sent by the Government of his country to make a tour of the United States and Canada in the interests of Russian pomology. In his large experimental orchard at Roveno Mr. Niemetz has under trial twelve hundred varieties of Apples alone, and of other fruits in proportion.

Mr. Joseph Meehan considers Cypripedium insigne one of the best winter-blooming window-plants. This Lady's-slipper will thrive in a five or six inch pot with ordinary care, and from its clusters of bright green leaves flower-stems will rise and bear from three to six flowers, which will last in good condition from six weeks to two months. When not forced, as in a cool window, the flowers will open at Christmas and they will be in good condition in March.

In the Horticultural Department of Cornell University, in addition to the courses formerly given, among the new subjects to be taken up next year are: (1) the literature of horticulture, including what has been written of plants in cultivation in all parts of the world, with reviews of periodical literature; (2) greenhouse management and construction; (3) floriculture; (4) the botany of cultivated plants; (5) theory and practice of spraying plants. These courses, in connection with those of pomology, landscape-gardening, the propagation of plants and handicraft, will make the horticultural course in Cornell very complete and attractive.

Vegetables from the south are already in our markets, to follow the latest which escaped frost in the north. Peas are coming from Charleston and sell for sixty cents a half-peck. String beans, from the same section, cost as much, and new southern okra is selling for ten cents a dozen. Celery, which is now coming from the south and west, as also from near-by points, has been scarce, owing to deferred shipments, while growers are busy storing the crop for winter; one dozen stalks cost seventy-five cents. Field mushrooms, the first seen here this autumn, cost but fifty cents a pound, although their natural flavor is preferred by many to that of the cultivated product; the cultivated ones, which are of even size and more inviting color, cost $1.00 a pound. Egg-plants still come from New Jersey, and sugar corn, Lima beans and peppers from Long Island. Vegetable marrows cost ten to fifteen cents apiece. Besides escarolle, chicory, Romaine and other lettuces, spinach, mint, water-cress, chervil, tarragon and chives are the greens most in demand.

A correspondent inquires how to suppress the Wild Carrot. This is certainly a pestilent weed, but it is rarely troublesome in cultivated fields, and this shows that it can be kept down by moderate cultivation, and if the weed is destroyed in waste places it will soon be comparatively harmless. If the plants are mowed off as often as the flowers appear they will eventually be destroyed, although they will continue to throw out stems from the bottom after each cutting, so that at first they will appear to increase rather than diminish. Sheep will eat the young plants, and they can be pulled out by hand when the ground is wet, which is a laborious, but sure, means of extirpation. If the root is cut off with a spud some distance below the surface of the ground the plant will usually die. A detailed account of this and many other of our aggressive weeds will be found in Farmers' Bulletin, No. 28, published by the United States Department of Agriculture, with the best means of exterminating the individuals and different classes of weeds.

The careful protection of Blackberries, Raspberries and other small-fruit plants in the winter is an essential of the highest success throughout the northern states. Even where the plants are not killed, their vitality is often so weakened by the cold that only a fraction of a crop can be expected. This is particularly true of the best varieties, which are more often grown under high cultivation, and, therefore, make a large and comparatively tender growth. The best method of protection is to lay down the canes and cover the tips with earth. *The Western Farmer* gives these directions for treating the plants in more northern latitudes. Where the rows are set north and south, begin at the northern end; remove the earth from the north side of the first hill to a depth of four inches; gather the branches closely with a wide fork, raising it toward the top of the bush, press it gently to the north and set the foot firmly on the base of the plant, bearing hard in the same direction. Where the bushes are old or the ground is hard, it is best to have a second man, who inserts a potato-fork deeply on the south side of the hill, pressing it over gently until the bush is nearly flat on the ground. It should then be held down with a fork until it is properly covered, and the top of the next hill should rest near the base of the first, and so on, making a continuous cover in the line of the row.

A late report from the United States Consul at Rheims gives an account of some experiments for keeping fruit fresh, which have been made by A. Petit, Chief of the Laboratory of Research in the Horticultural School at Versailles. Having observed the action of alcoholic vapors on the mold which appears on the surface of fruit in damp air, Mr. Petit, on the 31st of October, placed fresh grapes in a brick vault, cemented on the inside and closed as nearly hermetically as possible with a common wooden door. Among the fruits he had placed an open bottle of alcohol of about sixty cubic inches' capacity. On November 20th, grapes which had been placed in two other vaults, one of which was shut up without alcohol, while the other was open, were mostly rotted and covered with mold. In the one containing the alcohol the grapes were plump and fair. On the 7th of December these continued in good condition, although a few had turned brown, and at the end of nearly two months the bunches had lost only from two to four grapes each, while the rest were in a perfect state of preservation, the stalks being perfectly green, the berries full, firm and savory, having all the qualities of fresh-cut grapes. Experiments with this cheap and easy device are now in progress under direction of the Division of Pomology at Washington, but so far the effects of the treatment are not as good as they are said to have been in France. The fruits do not show any mold, it is true, but in many cases they are strongly impregnated with alcohol, and their value is thereby lessened. It seems, therefore, that further tests should be made before we can consider the vapor of alcohol as an ideal fruit preservative.

The first Almeria grapes of the season arrived last week, and 1,542 barrels were sold at the wholesale auction on Thursday. Prices ranged from $3.00 to $6.50 a barrel, the average for the entire sale being $4.65. This sale is ten days earlier than the first offering of last year. The fruit was not of the best quality, though the prices were high. It is estimated that 90,000 barrels will constitute the total shipments to the United States this year, against 125,000 barrels last season. The only oranges now to be had, excepting a few from Sicily, are those from Jamaica, and the fruit is of fair quality, considering its earliness. Several car-loads of Albemarle Pippins from Virginia have already been shipped from this port to England. Other American apples now in European markets are Baldwins, Greenings, Kings, Northern Spies and Ben Davis, the highest grades selling there for $3.00 to $6.00 a barrel. Although 17,845 barrels of cranberries have thus far reached this city, besides 3,082 crates, twice as many as were received up to the same time last year, the demand for this fruit has been active enough to force high prices. The excessive heat during September is said to have injured the Cape Cod crop, and frosts have more recently damaged the New Jersey cranberry-bogs, so that it is estimated that the total yield will not more than equal the short crop of last season. Extra-large varieties from Cape Cod command $8.00 a barrel. The season for California fruits is drawing to a close. The last plums, prunes and peaches have been received. Pears are scarce, and will continue to be so during the winter, since much of this fruit has been forwarded to England. One hundred car-loads of California fruits have crossed the ocean during the summer and autumn, and Clairgeau, Duchesse, Easter Beurre, Comice and Glout Morceau pears now command $3.50 to $5.00 a box at wholesale in Great Britain; prices for the same sorts here range from $1.85 to $3.20 a box. Grapes constituted the bulk of thirty-seven car-loads of western fruits sold in this city last week. Chestnuts, which early in the week sold for $7.50 to $8.00 a barrel, fell to $4.00 by Saturday, and hickory-nuts were plentiful at seventy-five cents and $1.00 a barrel.